

What is claimed is:

1 1. A method for determination of a zero error
2 in a Coriolis gyro (1') in which:
3 -the resonator (2) of the Coriolis gyro (1') has
4 appropriate disturbance forces applied to it such that at
5 least one natural oscillation of the resonator (2) is
6 stimulated, which differs from the stimulating oscillation
7 and from the read oscillation of the resonator (2), and
8 - a change in a read signal which represents the read
9 oscillation and results from the stimulation of at least
10 one natural oscillation is determined as a measure of the
11 zero error.

1 2. The method as claimed in claim 1,
2 characterized in that the disturbance forces are
3 alternating forces at appropriate disturbance frequencies,
4 with the disturbance frequencies of the resonator (2).

1 3. The method as claimed in claim 2,
2 characterized in that the change in the read signal is
3 recorded by subjecting the read signal to a demodulation
4 process based on the disturbance frequencies.

1 4. The method as claimed in one of claims 1 to
2 3, characterized in that the zero error contribution which
3 is produced by one of the at least one natural
4 oscillations is determined by determination of the
5 strength of the corresponding change in the read signal,
6 determination of the corresponding resonance Q-factor of
7 the natural oscillation and by calculation of the
8 determined strength and resonance Q-factor.

1 5. The method as claimed in claim 4,
2 characterized in that the resonance Q-factor of a natural
3 oscillation is determined by detuning the corresponding
4 disturbance frequency while at the same measuring the
5 change produced by this in the read signal.

1 6. The method as claimed in one of the
2 preceding claims, characterized in that two or more
3 successive natural oscillations of the resonator (2) are
4 stimulated, corresponding changes in the read signal are
5 recorded, and corresponding zero error contributions are
6 determined, with the zero error of the Coriolis gyro (1')
7 being determined by addition of the zero error
8 contributions.

1 7. A Coriolis gyro (1') characterized by a
2 device for determination of the zero error of the Coriolis
3 gyro (1') having:
4 - a disturbance unit (27) which applies appropriate
5 disturbance forces to the resonator (2) of the Coriolis
6 gyro (1') such that at least one natural oscillation of
7 the resonator (2) is stimulated, which differs from the
8 stimulating oscillation and the read oscillation of the
9 resonator (2), and
10 - a disturbance signal detection unit (26, 28, 29, 30,
11 31), which determines a disturbance component, which is
12 contained in a read signal that represents the read
13 oscillation and has been produced by the stimulation of
14 the at least one natural oscillation, as a measure of the
15 zero error.

1 8. The Coriolis gyro (1') as claimed in claim
2 7, characterized in that the disturbance signal detection
3 unit comprises two demodulators (28, 29), which operate in
4 quadrature with respect to one another, two low-pass
5 filters (31, 31) and a control and evaluation unit (26),
6 with the demodulators (28, 29) being supplied with the
7 read oscillation tapped-off signal, with the output
8 signals from the two demodulators (28, 29), being filtered
9 by in each case one of the low-pass filters (30, 31), and
10 with the output signals from the low-pass filters (30, 31)
11 being supplied to the control and evaluation unit (26),
12 which determines the zero error on this basis.

1 9. The Coriolis gyro (1') as claimed in claim
2 8, characterized in that the control and evaluation unit
3 (26) acts on the disturbance unit on the basis of the
4 signals supplied to it, by which means the frequencies of
5 the disturbance forces can be controlled by the control
6 and evaluation unit (26).